



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,603	09/26/2003	Uma Chandrashekhar	Chandrashekhar 5-1-1-9 (L)	1961
46363 7590 06/16/2008 PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			EXAMINER MANSFIELD, THOMAS L	
			ART UNIT 3623	PAPER NUMBER
			MAIL DATE 06/16/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/672,603	<b>Applicant(s)</b> CHANDRASHEKHAR ET AL.	
	<b>Examiner</b> THOMAS MANSFIELD	<b>Art Unit</b> 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

**Response to Amendment**

1. This Final Office action is in reply to the Reply to Office Action filed on 10 March 2008.
2. Claims 1-20 are currently pending and have been examined.

***Response to Arguments***

***Claim Rejections - 35 USC § 112***

3. Applicant's arguments [Remarks, page 8, first paragraph] filed 10 March 2008 have been fully considered and are persuasive.
4. Claims 2, 3, 12, and 13 were rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Applicant has directed clarification to the subject matter in the claims to the specification for the relationship distinction between the "plurality of nodes, "warehouse nodes", and "warehouse configuration". The Applicant is reminded that limitations appearing in the specification but not recited in the claims should not be read into the claim. See MPEP 2111.01. However, in light of this relationship distinction stated by the Applicant, the Examiner will interpret the claimed subject matter in Claims 2, 3, 12, and 13 in the broadest reasonable interpretation as stated in these claims and withdraws the rejection under 35 USC 112, second paragraph.

***Claim Rejections - 35 USC § 102***

5. Applicant's arguments filed 10 March 2008 have been fully considered but they are not persuasive.
6. Applicant submits that Agarwal et al (Agarwal) (U.S. Pub. No. 2003/0101107) does not teach or suggest in Claim 1: (1) *obtaining availability parameters associated with an inventory of spare components* [See Remarks, page 9, second paragraph].
7. In response to argument (1), the Examiner respectfully disagrees. Agarwal teaches *obtaining availability parameters* (supplier and sales related parameters, reliability/variability) (see at least paragraphs 0016 and 0036) *associated with an inventory of spare* (inventory requirements, including spare parts (spares)) (see at least paragraph 0017) *components* (inventory information data is then available for use by a client/customer) (see at least paragraph 0034).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:  
  
A person shall be entitled to a patent unless –  
  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
9. Claims 1-4, 6, 8-14, 16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Agarwal et al (Agarwal) (U.S. Pub. No. 2003/0101107).

With regard to Claim 1, Agarwal teaches *a method of optimizing spare component management* ((spares), calculate an optimal inventory policy) (see at least paragraph 0017) *for a network* (supply chain network) *having a plurality of nodes* (composed of several nodes, A node is a point in the supply chain network) (see at least paragraph 0025), *comprising*:

- *obtaining availability parameters* (supplier and sales related parameters, reliability/variability) (see at least paragraphs 0016 and 0036) *associated with an inventory of spare* (inventory requirements, including spare parts (spares)) (see at least paragraph 0017) *components* (inventory information data is then available for use by a client/customer) (see at least paragraph 0034).
- *determining a plurality of management configurations* (inventory management system, considers a number of supply-demand constraints) *in response to said availability parameters, each of said plurality of management configurations comprising at least one warehouse node* (node, warehouse) *selected from said plurality of nodes* (several nodes) (see at least paragraphs 0023-0027) *and a quantity of spare components in said inventory to be stored at said at least one warehouse node* (a company may have inventory at multiple locations, such as warehouses) (see at least paragraph 0039).

With regard to Claims 11, 19, and 20, these claims are substantially similar to the *method* Claim 1 as a *computer readable medium, apparatus, and system* and are rejected for the same rational as set forth above in Claim 1.

With regard to Claims 2 and 12, Agarwal teaches:

- *selecting at least one warehouse node for said plurality of nodes* (two warehouses) (see at least paragraph 0026).
- *repeating said determining step for each said warehouse node* (The lateral transfer process continues to process block 104 w[h]ere inventory levels are continuously verified) (see at least paragraph 0039).

With regard to Claims 3 and 13, Agarwal teaches *wherein said at least one warehouse node comprises a distributed warehouse node* (supplying product to a set of warehouses owned by another company) *and a centralized warehouse node* (supplying a product to a set of its own warehouses) (see at least paragraph 0027).

With regard to Claims 4 and 14, Agarwal teaches *wherein said inventory of spare components* (components) *is defined by a plurality of component types* (imperfect or non-operational) (see at least paragraph 0078), and said *availability parameters comprise at least one of a **failure rate*** (failed components), *a minimum repair time*, *a **restocking time*** (replenish the inventory) (see at least paragraph 0017), *and a **stockout probability*** (probability of at least one stockout) (see at least paragraphs 0085-0087) *associated with each of said plurality of component types*.

With regard to Claims 6 and 16, Agarwal does teaches *wherein, for each of said plurality of management configurations, said expected downtime of said network is further computed using delivery times* (time supply) *from said at least one warehouse node to remaining ones of said plurality of nodes* (ensure that all nodes are being replenished at the same time, balance time supplies) (see at least paragraphs 0058-0062).

With regard to Claims 8 and 18, Agarwal teaches:

- *obtaining a target stockout probability for each of said plurality of component types* (expected probability of a stockout) (see at least paragraphs 0096).
- *for each of said plurality of management configurations, computing said quantity of spare components to be stored* (safety stock level) *at said at least one warehouse node by adjusting* (are plugged into the equation until a satisfactory stock out probability is obtained) *a quantity of each of said plurality of component types until said respective stockout probability is less than or equal to*  $(one\ (1)\ minus\ the\ probability\ that\ there\ will\ be\ no\ failures)$  *said respective target stockout probability* (see at least paragraphs 0096-0108).

With regard to Claim 9, Agarwal teaches wherein said inventory of spare components (spare parts (spares) is obtained dynamically from said network (provide a dynamic, minimum time-phased method of inventory asset management) (see at least paragraph 0017).

With regard to Claim 10, Agarwal teaches wherein said availability parameters are obtained dynamically from said network (inventory requirements, optimal inventory policy) (see at least paragraph 0017).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
11. Claims 5, 7, 17, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal as applied to claims 1-4, 6, 8-14, 16, and 18-20 above, and further in view of Huang U.S. 6,151,582).

With regard to Claims 5 and 15, Agarwal does not specifically teach *for each of said plurality of management configurations, computing an expected downtime of said network using said minimum repair time associated with at least one of said plurality of component types*. Huang teaches *for each of said plurality of management configurations, computing an expected downtime (estimate repair time) of said network using said minimum repair time (estimate repair time requirements) associated with at least one of said plurality of component types (with respect to resource constraints which are repair resource capacities and key component availability) in analogous art of managing an agile supply chain for the purposes of "...a process to determine the repair plan considering repair people, test equipment and key components" (see at least column 17, lines 1-36).*

It would have been obvious to one of ordinary skill in the art at the time of the invention that the inventory management system of Agarwal would have benefited from the teachings of Huang. The result would be, "...a process to determine the repair plan considering repair people, test equipment and key components" (Huang, column 17, lines 1-36).



With regard to Claims 7 and 17, Agarwal does not specifically teach *obtaining a critical repair time associated with each of said plurality of component types; and for each of said plurality of management configurations, computing a number of expected critical repair time violations*. Huang teaches obtaining a critical repair (repair supply chain, Other critical characteristics, e.g., total running time) (see at least APPENDIX B, column 131, lines 46-67) associated with each of said plurality of component types in analogous art of service parts inventory planning and management for the purposes of, "...estimating future requirements refers to the process of estimating failures of the equipment and of the repairable parts that caused the failures. This is done to estimate repair time requirements (determined in Requirements-Supply Reconciliation Planning Process) and equipment availability at equipment locations, both of which depend on the part that has failed" (see at least column 16, lines 4-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention that the inventory management system of Agarwal would have benefited from the teachings of Huang. The result would be, "...estimating future requirements refers to the process of estimating failures of the equipment and of the repairable parts that caused the failures. This is done to estimate repair time requirements (determined in Requirements-Supply Reconciliation Planning Process) and equipment availability at equipment locations, both of which depend on the part that has failed" (Huang, column 16, lines 4-16).

Agarwal does not specifically teach for each of said plurality of management configurations, computing a number of expected critical repair time violations. Huang teaches *for each of said plurality of management configurations, computing a number of expected critical repair time violations* in analogous art of service parts inventory planning and management for the purposes of “Ability to identify violated constraints” (see at least column 68, lines 32-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention that the inventory management system of Agarwal would have benefited from the teachings of Huang. The result would be, “Ability to identify violated constraints” (Huang, column 68, lines 32-34).

- 12. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

**13.** The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Ims et al (U.S. Pub. No. 2002/0091533) discloses techniques for automated e-business services.
- Dietrich et al (U.S. 5,970,465) discloses a method for part procurement in a production system with constrained resources.
- Cohen et al, "Near-Optimal Service Constrained Stocking Policies for Spare Parts", Operations Research, Jan./Feb. 1989, 37, 1, pg. 104, discloses an optimal stocking policy for a facility that stocks a collection of items linked by an overall service level requirement.
- Wang, "Service Parts Logistics: Modeling, Analysis and Application", UMI Microform 9830011, 1998, discloses strategies and methodologies for managing service parts logistics systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS MANSFIELD whose telephone number is (571)270-1904. The examiner can normally be reached on Monday-Thursday 8:30 am-6 pm, alt. Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Van Doren can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. M./  
Examiner, Art Unit 3623

29 May 2008  
Thomas Mansfield

/Andre Boyce/  
Primary Examiner, Art Unit 3623